

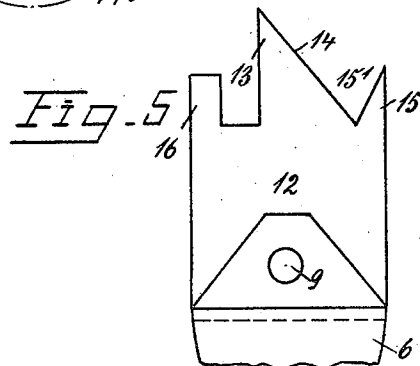
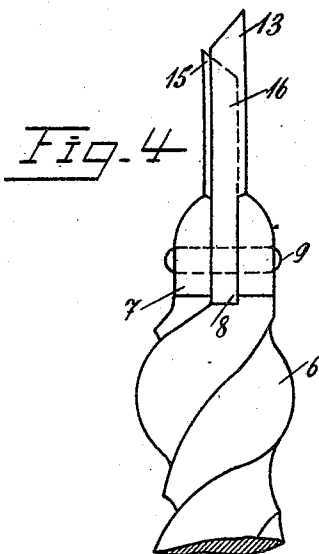
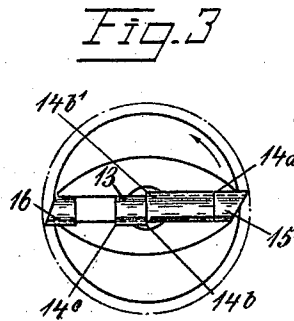
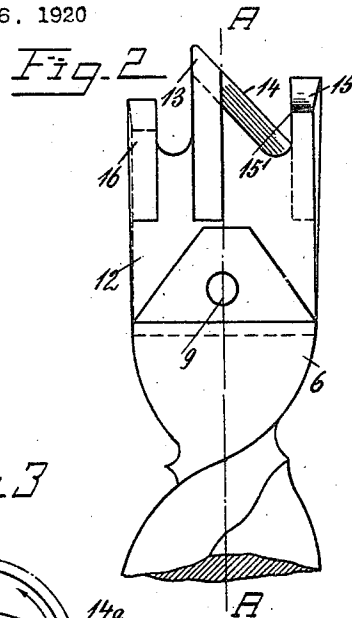
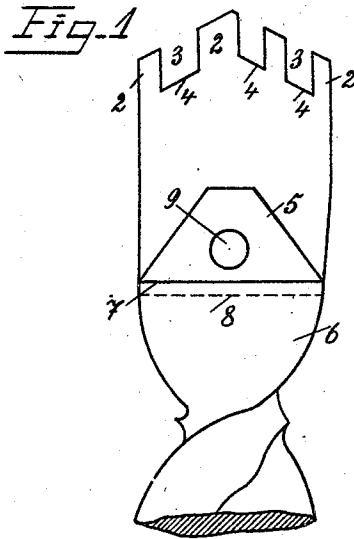
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1,486,898

H. HUNDRIESER

AUGER BIT OR DRILL

Filed Aug. 26, 1920



Inventor
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UNITED STATES PATENT OFFICE.

HANS HUNDRIESER, OF HAHNSER, NEAR BERLIN, GERMANY.

AUGER BIT OR DRILL.

Application filed August 26, 1920. Serial No. 406,143.

(GRANTED UNDER THE PROVISIONS OF THE ACT OF MARCH 3, 1921, 41 STAT. L., 1313.)

To all whom it may concern:

Be it known that I, HANS HUNDRIESER, a citizen of the German Republic, residing at Hahnser, near Berlin, Germany, have invented certain new and useful Improvements in Auger Bits or Drills (for which I have filed application in Germany Aug. 9, 1915, Patent No. 303,030; Germany, Mar. 16, 1918, and Germany, July 26, 1919, all in the name of Alfred Stapf, Berlin, Germany, and Hans Hundrieser, with applicant's consent and knowledge), of which the following is a specification.

The invention relates to an improved drill or auger-bit for boring or drilling holes into stones, rocks and the like, and in particular to an auger or drill of the kind in which resistances are formed within the recesses of the cutting edge or bit of the tool. In auger-bits of this kind the boring action and the efficiency of the tool is badly influenced by the rock or material remaining between the grooves or cuts produced in the rock, stone or the like, since the said left rock or material is pressed against the front or from the outside to the inside of the tool, so that the latter has but a slow advance or feeding.

The object of the present invention is to provide a tool of the kind which will have a relatively quick feeding or, in other words, which may be driven with a higher speed and a lower or less expenditure of power than is available for drills heretofore in use.

This object is realized by arranging and shaping the said resistances or breaking faces in a manner that they will act like wedges in a direction from the axis or center outwardly with respect to the feeding direction of the tool, whereby the remaining or left rock, stone or other material is removed by pressure in the direction from the interior to the outside.

Referring to the accompanying drawings, which illustrate several embodiments of the invention, to the details of construction of which, however, the invention is not limited.

Fig. 1 represents an elevation of one embodiment of the invention.

Figs. 2 to 4 are an elevation, a plan and a side view, respectively, of a further embodiment having a central tooth out of axial alignment.

Fig. 5 is a modification thereof,

In Fig. 1 the cutting edge of the auger-bit has projecting teeth 2 formed by recesses 3 cut into the edge. The bottom faces of said recesses 3 sloping from the centre to the outside, afford breaking planes or faces 4. On entering into the stone, rock or the like the teeth 2 will cut concentric grooves, leaving within the recessed portions 3 the stone, rock or the like in the shape of cylindrical projections. On the further advance of the tool these cylindrical projections will be removed by said breaking faces 4, owing to the angular or sloping relation of the latter to the longitudinal axis of the tool acting like a wedge from the inside to the outside. The auger-bit 1 is secured within the slotted end 5 of the driving shaft or holder 6 by means of a detachable bolt or rivet 9. The two jaws forming the said slotted end are preferably given a conical shape or contour and the tool will be more firmly clasped by said jaws if, as shown in the drawings, the slot 8 extends into the body of the shaft below the base 7 of the conical jaws. The bolt or rivet 9 is but slightly riveted so as to be readily detachable for the removal of the auger-bit from the holder or shaft. This mode of securing the tool to the holder 6 affords a perfectly firm connection between the parts without presenting any resistance to the regular discharge of the bore-dust.

Referring to Figs. 2 to 4, the boring blade 12 carries a central cutting tooth 13 located laterally with relation to the vertical axial line A—A of the tool, the breaking edge of said central tooth 13, that is the edge, which at the feed movement of the drill comes into contact with the material standing between the grooves formed by the teeth of the drill having an oblique direction from the top of said tooth down to the bottom of the adjacent tooth 15. As will be seen from Fig. 3, the said breaking edge 14^a to 14^b will be working on one side, and the breaking edge 14^b to 14^a on the other side of the auger-blade. One of the two lateral teeth 15, preferably is slightly narrower than the other lateral tooth 16, the object of this construction being to enable the remaining cylinder between the cutting tooth 16 and the central tooth 13 to be removed by the breaking edge 14 without jamming. The said tooth 15 having preferably a slightly greater length

than the tooth 16 may serve as a first-cutter. The inside cutting edge 15' of the tooth 15 may have a sloping shape, as shown in Fig. 5, instead of being vertical as in Fig. 2.

5 The mode of securing the auger-bit to the driving shaft is the same, as before described with respect to Fig. 1.

Having thus described my invention, what I claim as new and desire to secure by

10 Letters Patent is—

1. An auger-bit or drill for boring rocks, stones and the like, comprising a drilling tool, recesses in the cutting edge thereof and resistances in said recesses, formed by slope

15 breaking faces adapted to operate in the direction of the advance or feeding of the

tool like a wedge from the longitudinal axis of the tool towards the outside.

2. An auger-bit or drill, comprising a drilling tool, recesses in the cutting edge thereof, resistances in said recesses, a holder or shaft for said tool, two conical jaws at the end of said holder, a slot between said jaws to receive the tool and a detachable bolt or rivet therein to secure the tool to

20 the holder or shaft.

25

In testimony whereof I affix my signature in presence of two witnesses.

HANS HUNDRIESER.

Witnesses:

N. HORSTER,
K. WOLDUSK.